

In the Specification:

Please replace the paragraph on lines 2-7 of page 21 (amended) with the following paragraph:

In one aspect of the invention, a variable rate multi-arc leaf spring assembly is provided. The assembly includes a main leaf spring that is constructed of a composite material and defines an upwardly curved central arc portion having a first radius and at least one pair of upwardly curved peripheral arc portions extending from the central arc portion and having radii not equal to the first radius. The main leaf spring provides a continuous non-linear variable spring deformation rate.

In the Claims:

~~Please cancel claims 22-30 without prejudice.~~

Please amend claims 1, 6-8, 12, 17 and 18 as follows:

*Ball
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A1*

1. (Amended) A variable rate multi-arc leaf spring assembly comprising:
a main leaf spring constructed of a composite material, said main leaf spring
defining an upwardly curved central arc portion having a first radius and at least one pair
of upwardly curved peripheral arc portions extending from said central arc portion and
having radii not equal to said first radius,
wherein said main leaf spring provides a continuous variable spring deformation
rate including a soft spring rate and a hard spring rate.

A2

6. (Amended) The variable rate multi-arc leaf spring assembly of claim 5
wherein said mounting eyelet includes an out-of-mold metallic insert for installation.

A2

7. (Amended) The variable rate multi-arc leaf spring assembly of claim 1
further comprising a load plate mounted beneath said main leaf spring, wherein said load
plate gradually engages said main leaf spring during a predetermined set of payload
conditions to enhance said soft spring rate.

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8. (Amended) The variable rate multi-arc leaf spring assembly of claim 7
wherein said load plate is constructed of said composite material.

12. (Amended) A variable rate multi-arc leaf spring assembly comprising:

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a main leaf spring constructed of a composite material, said main leaf spring defining an upwardly curved central arc portion having a first radius and at least one pair of upwardly curved peripheral arc portions extending from said central arc portion and having radii not equal to said first radius, wherein said main leaf spring provides a continuous variable spring deformation rate including a soft spring rate and a hard spring rate; and

A3 cont

a load plate mounted beneath said main leaf spring, wherein said load plate gradually engages said main leaf spring during a predetermined set of payload conditions to enhance said soft spring rate.

A4

17. (Amended) The variable rate multi-arc leaf spring assembly of claim 16 wherein said mounting eyelet includes an out-of-mold metallic insert for installation.

18. (Amended) The variable rate multi-arc leaf spring assembly of claim 12 wherein said load plate is constructed of said composite material.

Please add the following claims:

A5

31. (New) A method of achieving a continuous non-linear variable spring deformation rate for a multi-arc leaf spring assembly comprising:
providing a main leaf spring defining a central arc portion having a first radius and at least one pair of upwardly curved peripheral arc portions having radii not equal to said first radius;

providing a load plate beneath said main leaf spring;
applying a downward force to said main leaf spring, wherein said central arc portion of said main leaf spring flexes and gradually engages said load plate to achieve an enhanced soft spring rate; and

applying an increased downward force to said main leaf spring, wherein said central arc portion engages said load plate throughout a length of said load plate and said at least one pair of peripheral arc portions flexes to achieve a hard spring rate with a continuous transition from said soft spring rate to said hard spring rate.